

# TWENTY MILE CREEK WATER ASSOCIATION SOURCE WATER ASSESSMENT REPORT

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## State of Idaho Department of Environmental Quality

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## Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the watershed characteristics.

This report, *Source Water Assessment for Twenty Mile Creek Water Association*, describes the public drinking water system, the zone boundary of water contribution, and the associated potential contaminant sources located within these boundary. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The Twenty Mile Creek Water Association drinking water source consists of one surface water intake on Twenty Mile Creek. Water is collected behind a concrete dam with a screened inlet and is piped to the treatment plant where it is passed through a slow sand filter and chlorinated before entering the distribution system. . In a susceptibility analysis performed September 7, 2000 by IDEQ, Twenty Mile Creek received a ranking of low susceptibility to contamination from volatile organic chemicals, synthetic organic chemicals, inorganic chemicals and microbials. The main threat to water quality in Twenty Mile Creek is turbidity from land disturbance in the watershed. Testing has indicated the presence Radionuclides below the Maximum Contaminant Level (MCL) since 1985. The herbicide endothall was detected at a concentration of 17.8 micrograms per liter in a single sample taken in August 1993. The MCL is 100 micrograms per liter. The water was re-tested in November 1993 and no endothall was detected then. Volatile organic chemicals and inorganic chemicals have never been detected in the water.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the Twenty Mile Creek Water Association drinking water system, source water protection activities should focus on preventing sediment flow into Twenty Mile Creek from roads, logging or mining or recreation in the watershed and should include periodic inspections of the watershed to monitor any land use changes. Due to the fairly short time associated with the movement of surface waters, source water protection activities should be aimed at both short-term and long-term management strategies to counter any future contamination threats. Source water protection activities should be coordinated with the appropriate public land management agencies and private landowners in the watershed.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact your regional IDEQ office or the Idaho Rural Water Association.

# SOURCE WATER ASSESSMENT FOR TWENTY MILE CREEK WATER ASSOCIATION, IDAHO

## Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area, map showing the entire watershed contributing to the delineated area, map showing the twenty-four (24) hour emergency response delineation, and the inventory of significant potential sources of contamination identified within the delineated area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is attached.

### Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the intakes and watershed characteristics.

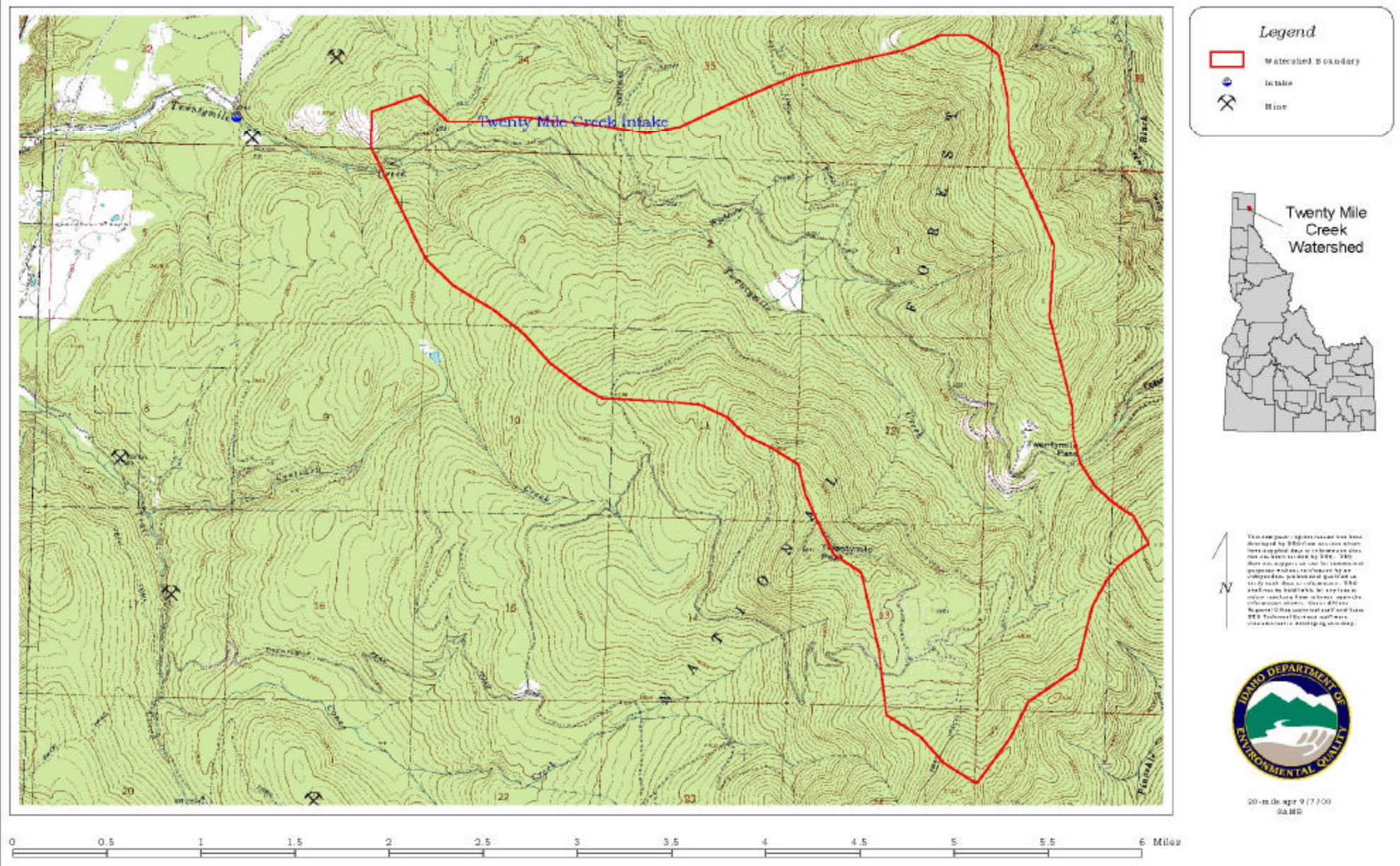
### Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, time and resources to accomplish the assessments are limited. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (IDEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. IDEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.



Figure 1. Twenty Mile Creek Water Association Delineation Map and Contaminant Sources



## **Section 2. Conducting the Assessment**

### **General Description of the Source Water Quality**

The Twenty Mile Creek Water Association water system serves a population of approximately 300 people in and near the town of Naples, Idaho. (Figure 1). Public drinking water is drawn from Twenty Mile Creek. The watershed above the intake covers more than 4800 acres north east of town.

The primary water quality issue currently facing Twenty Mile Creek Water Association is that of preventing contamination associated with land disturbances in the watershed.

### **Defining the Zones of Contribution--Delineation**

To protect surface water systems from potential contaminants, the EPA required that the entire drainage basin be delineated upstream from the intake to the hydrologic boundary of the drainage basin. (U.S. EPA, 1997b). The EPA recognized that an intake on a large water body could have an extensive drainage basin. Therefore, the EPA recommended that large drainage basins be segmented into smaller areas for the purpose of implementing a cost-effective potential contaminant inventory and susceptibility analysis. The delineation process established the physical area around an intake that became the focal point of the assessment. Because the watershed for the Twenty Mile Creek Water Association water system is relatively small, the delineation was not subdivided (Figure 1). The delineation extends to the watershed boundaries as they appear on a 7.5-minute USGS topographic map.

### **Identifying Potential Sources of Contamination**

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of surface water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by IDEQ and from available databases.

The dominant land use in the Twenty Mile Creek watershed is undeveloped, forested land. There is a borrow pit near the creek upstream from the treatment plant. Unpaved roads leading to Twenty Mile Pass and other parts of the watershed follow and cross the creek. Land in the drainage is both privately and publicly owned

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are observed. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a

number of methods that water systems can use to work cooperatively with potential sources of contamination. These involve educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply intake.

### **Contaminant Source Inventory Process**

A contaminant inventory of the study area was conducted during December of 1998. The first phase involved identifying and documenting potential contaminant sources within the Twenty Mile Creek Water Association Source Water Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by IDEQ. The map was sent to Twenty Mile Creek Water Association for review. No potential contaminant sites in the watershed above the intake were disclosed by the database search.



### Section 3. Susceptibility Analyses

Significant potential sources of contamination were ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity and construction of the intake, land use characteristic, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each intake is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

#### Intake Construction

The construction of the Twenty Mile Creek Water Association public water system intakes directly affects the ability of the intake to protect the source from contaminants. The Twenty Mile Creek Water Association drinking water system consists of one screened intake drawing water from behind a concrete collection dam that provides surface water for domestic and other uses. Susceptibility to contamination, based on intake construction details reported in IDEQ sanitary surveys, is moderate.

#### Potential Contaminant Source and Land Use

The Twenty Mile Creek Water Association public water system ranks in the low class for susceptibility to contamination from volatile organic chemicals, synthetic organic chemicals and inorganic chemicals. As indicated in Table 1 the intake shows a low susceptibility to microbial contamination, which is generally related to storm water runoff, the presence of septic systems, or agricultural grazing in the surface water protection zone.

**Table 1. Summary Twenty Mile Creek Water Association Susceptibility Evaluation**

Intake	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
	IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Twenty Mile Creek	L	L	L	L	M	L	L	L	L

H = High Susceptibility, M = Moderate Susceptibility, Low Susceptibility

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

H\* - Indicates source automatically scored as high susceptibility due to presence of either a VOC, SOC or an IOC above the Maximum Contaminant Level in the finished drinking water or the presence of significant contaminant sources within the 1000 feet of the intake and within the delineated area.

#### Susceptibility Summary

The Twenty Mile Creek Water Association drinking water source is most threatened by sediment-laden runoff from disturbed land in the watershed.

## **Section 4. Options for Source Water Protection**

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For Twenty Mile Creek Water Association, source water protection activities should focus on implementation of best management practices aimed at reducing sediment runoff from logging, mining, road building or maintenance, and recreational activity in the drainage. Since the land in the watershed is not owned entirely by Twenty Mile Creek Water Association, partnerships with private land owners, federal, state and local agencies to regulate land use in the watershed should be established. Due to the relatively short time involved with the movement of surface water, source water protection activities should be aimed at short-term management strategies, and at the same time need to address long-term impacts from mining, logging and other land disturbances in the watershed.



## **Assistance**

Public water supplies and others may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments.

Coeur d'Alene Regional IDEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: <http://www.deq.state.id.us>

## References Cited

Idaho Department of Agriculture, 1998. Unpublished Data.

Idaho Division of Environmental Quality, Unpublished Data

EPA (U.S. Environmental Protection Agency), 1997, State Methods for Delineating Source Water Protection Areas for Surface Water Supplied Sources of Drinking Water, EPA 816-R-97-008, 40p.

U.S. Government Printing Office, 1995, Code of Federal Regulations, 40 CFR 112, Appendix C-III, Calculation of the Planning Distance

## Attachment A

# Twenty Mile Creek Water Association Susceptibility Analysis Worksheet

The final scores for the susceptibility analysis were determined from the addition of the Potential Contaminant Source/Land Use Score and Source Construction Score.

Final Susceptibility Scoring:

0 - 7    Low Susceptibility

8 - 15    Moderate Susceptibility

> 16    High Susceptibility

# Surface Water Susceptibility Report

Public Water System Name : **TWENTY MILE CREEK WATER ASSN** Source: **TWENTY MILE CK**  
 Public Water System Number : **1110030**  
 11/14/00 1:12:58 PM

<b>1. System Construction</b>		<b>Score</b>			
Intake structure properly constructed	YES	0			
Infiltration gallery or well under the direct influence of surface water	NO	2			
<b>Total System Construction Score</b>		<b>2</b>			
<b>2. Potential Contaminant Source / Land Use</b>		<b>IOC Score</b>	<b>VOC Score</b>	<b>SOC Score</b>	<b>Microbial Score</b>
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials		0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
<b>Total Potential Contaminant Source / Land Use Score</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>3. Final Susceptibility Source Score</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>4. Final Source Ranking</b>		Low	Low	Low	Low
* Special consideration due to significant contaminant:		The source water has no special susceptibility			

## POTENTIAL CONTAMINANT INVENTORY

### LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as **ASuperfund** is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.